

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): An aqueous polymer dispersion obtained by emulsion polymerization of ethylenically unsaturated monomers in an aqueous medium in the presence of at least one free radical polymerization initiator and at least one stabilizer;

wherein:

the at least one stabilizer is employed before, during or after polymerization;

the at least one stabilizer comprises at least one amphiphilic polymer comprising one or more hydrophobic units A and one or more hydrophilic units B;

the one or more hydrophobic units A are formed from a polyisobutene block, at least 50 mol% of polyisobutene macromolecules of the polyisobutene block having terminally arranged double bonds, based on a total number of polyisobutene macromolecules;

the one or more hydrophilic units B are formed from at least one alkylene oxide selected from the group consisting of monoaminoethylene oxide, monothioethylene oxide, and diaminoethylene oxide; and

the at least one amphiphilic polymer has an ABA structure.

Claim 2 (Previously Presented): The aqueous polymer dispersion according to claim 1, comprising from 0.1 to 70% by weight of the at least one amphiphilic polymer.

Claim 3 (Previously Presented): The aqueous polymer dispersion according to claim 1, wherein at least 60 mol% of polyisobutene macromolecules of the polyisobutene block have terminally arranged double bonds, based on the total number of polyisobutene macromolecules.

Claims 4 to 6 (Cancelled).

Claim 7 (Previously Presented): The aqueous polymer dispersion according to claim 1, wherein:

the polyisobutylene block is functionalized by introduction of polar groups; and
the functionalized polyisobutene block is optionally further modified.

Claim 8 (Previously Presented): The aqueous polymer dispersion according to claim 7, wherein the polyisobutene block is functionalized by at least one reaction selected from the group consisting of:

- i) reaction with aromatic hydroxy compounds in the presence of an alkylation catalyst to give aromatic hydroxy compounds alkylated with polyisobutenes,
- ii) reaction of the polyisobutene block with a peroxy compound to give an epoxidized polyisobutene,
- iii) reaction of the polyisobutene block with an alkene which has a double bond substituted by electron-attracting groups (enophile), in an ene reaction,
- iv) reaction of the polyisobutene block with carbon monoxide and hydrogen in the presence of a hydroformylation catalyst to give a hydroformylated polyisobutene,
- v) reaction of the polyisobutene block with a phosphorus halide or a phosphorus oxychloride to give a polyisobutene functionalized with phosphono groups,
- vi) reaction of the polyisobutene block with a borane and subsequent oxidative cleavage to give a hydroxylated polyisobutene,
- vii) reaction of the polyisobutene block with an SO₃ source, preferably acetyl sulfate or oleum, to give a polyisobutene having terminal sulfo groups, and

- viii) reaction of the polyisobutene block with oxides of nitrogen and subsequent hydrogenation to give a polyisobutene having terminal amino groups.

Claim 9 (Previously Presented): The aqueous polymer dispersion according to claim 1, wherein the at least one amphiphilic polymer is obtained by reacting hydrophobic units A comprising a functionalized polyisobutene block with alkylene oxides or by a polymer-analogous reaction with one or more polyalkylene oxides.

Claim 10 (Cancelled).

Claim 11 (Previously Presented): The aqueous polymer dispersion according to claim 1, wherein the at least one amphiphilic polymer has an A_pB_q structure, where p and q, independently of one another, are from 1 to 8.

Claim 12 (Previously Presented): The aqueous polymer dispersion according to claim 1, comprising from 0.1 to 70% by weight of blends of amphiphilic polymers.

Claim 13 (Cancelled).

Claim 14 (Previously Presented): The aqueous polymer dispersion according to claim 11, comprising from 0.5 to 20% by weight of the at least one amphiphilic polymer.

Claim 15 (Previously Presented): The aqueous polymer dispersion according to claim 11, wherein:

the at least one hydrophobic block A consists of polyisobutene;

the at least one hydrophilic block B consists of at least one alkylene oxide selected from the group consisting of monoaminoethylene oxide, monothioethylene oxide, and diaminoethylene oxide;

A is a polyisobutene block having an average molar mass M_n of from 200 to 50,000;
and

B is a polyalkylene oxide block having an average molar mass M_n of from 200 to 50,000.

Claim 16 (Currently Amended): The aqueous polymer dispersion according to ~~claim 10~~claim 1, wherein:

A is a polyisobutene block having an average molar mass M_n of from 200 to 50,000;
and

B is a polyalkylene oxide block having an average molar mass M_n of from 200 to 50,000.

Claim 17 (Currently Amended): The aqueous polymer dispersion according to ~~claim 10~~claim 1, wherein:

A is a polyisobutene block having an average molar mass M_n of from 200 to 20,000;
and

B is a polyalkylene oxide block having an average molar mass M_n of from 500 to 30,000.

Claim 18 (Currently Amended): The aqueous polymer dispersion according to ~~claim 10~~claim 1, wherein:

A is a polyisobutene block having an average molar mass M_n of from 450 to 5,000;
and

B is a polyalkylene oxide block having an average molar mass M_n of from 800 to 15,000.

Claim 19 (Currently Amended): The aqueous polymer dispersion according to ~~claim 19~~
~~to claim 1~~, wherein:

A is a polyisobutene block having an average molar mass M_n of from 450 to 5,000;

B is a polyalkylene oxide block having an average molar mass M_n of from 800 to 15,000; and

the polyisobutene block comprises polyisobutene functionalized with succinic anhydride groups (PIBSA).

Claim 20 (Previously Presented): A process for preparing the aqueous polymer dispersion according to claim 1, comprising:

polymerizing ethylenically unsaturated monomers in the aqueous medium in the presence of the at least one free radical polymerization initiator and the at least one stabilizer by an emulsion polymerization method;

wherein:

the at least one stabilizer is employed before, during or after the polymerization;

at least 50 mol% of the hydrophobic units A are polyisobutene macromolecules having terminally arranged double bonds.

Claim 21 (Previously Presented): The process according to claim 20, wherein:

the amphiphilic polymer has an A_pB_q structure, where p and q, independently of one another, are from 1 to 8;

A is a polyisobutene block having an average molar mass M_n of from 200 to 50,000;
and

B is a polyalkylene oxide block having an average molar mass M_n of from 200 to 50,000.

Claim 22 (Previously Presented): The process according to claim 20, wherein:

the amphiphilic polymer has an A-B-A structure;

A is a polyisobutene block having an average molar mass M_n of from 200 to 20,000;
and

B is a polyalkylene oxide block having an average molar mass M_n of from 500 to 30,000.

Claim 23 (Previously Presented): The process according to claim 20, wherein:

the amphiphilic polymer has an A-B-A structure;

A is a polyisobutene block having an average molar mass M_n of from 450 to 5,000;
and

B is a polyalkylene oxide block having an average molar mass M_n of from 800 to 15,000.

Claim 24 (Previously Presented): The process according to claim 20, wherein:

the amphiphilic polymer has an A-B-A structure;

A is a polyisobutene block having an average molar mass M_n of from 450 to 5,000;

B is a polyalkylene oxide block having an average molar mass M_n of from 800 to 15,000; and

the polyisobutene block comprises polyisobutene functionalized with succinic anhydride groups (PIBSA).

Claim 25 (Previously Presented): An associative thickener for aqueous media, comprising the aqueous polymer dispersion according to claim 1.

Claim 26 (Previously Presented): A paper coating slip, comprising the aqueous polymer dispersion according to claim 1.

Claim 27 (Previously Presented): The paper coating slip according to claim 26, wherein:

the amphiphilic polymer has an A_pB_q structure, where p and q, independently of one another, are from 1 to 8;

the at least one hydrophobic block A consists of polyisobutene;

the at least one hydrophilic block B consists of at least one alkylene oxide selected from the group consisting of monoaminoethylene oxide, monothioethylene oxide, and diaminoethylene oxide;

A is a polyisobutene block having an average molar mass M_n of from 200 to 50,000; and

B is a polyalkylene oxide block having an average molar mass M_n of from 200 to 50,000.

Claim 28 (Previously Presented): The aqueous polymer dispersion according to claim 1, wherein at least 80 mol% of polyisobutene macromolecules of the polyisobutene block have terminally arranged double bonds, based on the total number of polyisobutene macromolecules

Claim 29 (Previously Presented): An aqueous polymer dispersion obtained by emulsion polymerization of ethylenically unsaturated monomers in an aqueous medium in the presence of at least one free radical polymerization initiator and at least one stabilizer;

wherein:

the at least one stabilizer is employed before, during or after polymerization;

the at least one stabilizer comprises at least one amphiphilic polymer comprising one or more hydrophobic units A and one or more hydrophilic units B;

the one or more hydrophobic units A are formed from a polyisobutene block, at least 50 mol% of polyisobutene macromolecules of the polyisobutene block have terminally arranged double bonds; and

the at least one amphiphilic polymer has an ABA structure.

Claim 30 (Previously Presented): The aqueous polymer dispersion according to claim 29, comprising from 0.1 to 70% by weight of the at least one amphiphilic polymer.

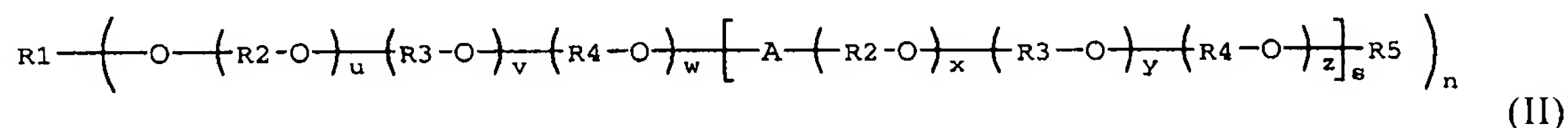
Claim 31 (Previously Presented): The aqueous polymer dispersion according to claim 29, wherein at least 60 mol% of polyisobutene macromolecules of the polyisobutene block have terminally arranged double bonds, based on the total number of polyisobutene macromolecules.

Claim 32 (Previously Presented): The aqueous polymer dispersion according to claim 29, wherein at least 80 mol% of polyisobutene macromolecules of the polyisobutene block have terminally arranged double bonds, based on the total number of polyisobutene macromolecules

Claim 33 (Previously Presented): The aqueous polymer dispersion according to claim 29, wherein the one or more hydrophilic units B are formed from repeating ethylene oxide or ethylene oxide/propylene oxide units.

Claim 34 (Previously Presented): The aqueous polymer dispersion according to claim 33, wherein the one or more hydrophilic units B comprise up to 50% by weight of propylene oxide units.

Claim 35 (Previously Presented): The aqueous polymer dispersion according to claim 29, wherein the one or more hydrophilic units B are formed from the following formula



where, independently from one another,

R^1 is hydrogen, C_1 – C_{24} –alkyl, R^6 –C(=O)–, R^6 –NH–C(=O)– or a polyalcohol radical;

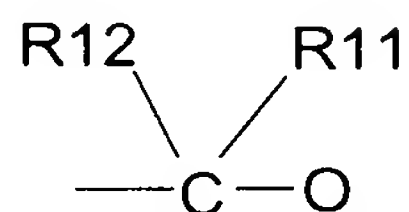
R^5 is hydrogen, C_1 – C_{24} –alkyl, R^6 –C(=O)– or R^6 –NH–C(=O)–;

R^2 to R^4 are $-(CH_2)_2-$, $-(CH_2)_3-$, $-(CH_2)_4-$, $-CH_2-CH(R^6)-$,
 $-CH_2-CHOR^7-CH_2-$;

R^6 is C_1 – C_{24} –alkyl;

R^7 is hydrogen, C_1 – C_{24} –alkyl, R^6 –C(=O)– or R^6 –NH–C(=O)–;

A: is $-\text{C}(=\text{O})-\text{O}$, $-\text{C}(=\text{O})-\text{D}-\text{C}(=\text{O})-\text{O}$,
 $-\text{CH}_2-\text{CH}(-\text{OH})-\text{D}-\text{CH}(-\text{OH})-\text{CH}_2-\text{O}$,
 $-\text{C}(=\text{O})-\text{NH}-\text{D}-\text{NH}-\text{C}(=\text{O})-\text{O}$;



D is $-(\text{CH}_2)_t$ -, arylene, substituted or unsubstituted;
 R^{11} and R^{12} are hydrogen, C_1 - C_{24} -alkyl, C_1 - C_{24} -hydroxyalkyl, benzyl or phenyl;
n is 1 if R^1 is not a polyalcohol radical or
is from 1 to 500 if R^1 is a polyalcohol radical;
s is from 0 to 1,000;
t is from 1 to 12;
u is from 1 to 2,000;
v is from 0 to 2,000;
w is from 0 to 2,000;
x is from 0 to 2,000;
y is from 0 to 2,000; and
z is from 0 to 2,000.

Claim 36 (Previously Presented): The aqueous polymer dispersion according to claim 29, wherein the one or more hydrophilic units B are formed from at least one alkylene oxide selected from the group consisting of monoaminoethylene oxide, monothioethylene oxide, and diaminoethylene oxide.

Claim 37 (Previously Presented): The aqueous polymer dispersion according to claim 29, wherein:

the polyisobutylene block is functionalized by introduction of polar groups; and
the functionalized polyisobutene block is optionally further modified.

Claim 38 (Previously Presented): The aqueous polymer dispersion according to claim 37, wherein the polyisobutene block is functionalized by at least one reaction selected from the group consisting of:

- i) reaction with aromatic hydroxy compounds in the presence of an alkylation catalyst to give aromatic hydroxy compounds alkylated with polyisobutenes,
- ii) reaction of the polyisobutene block with a peroxy compound to give an epoxidized polyisobutene,
- iii) reaction of the polyisobutene block with an alkene which has a double bond substituted by electron-attracting groups (enophile), in an ene reaction,
- iv) reaction of the polyisobutene block with carbon monoxide and hydrogen in the presence of a hydroformylation catalyst to give a hydroformylated polyisobutene,
- v) reaction of the polyisobutene block with a phosphorus halide or a phosphorus oxychloride to give a polyisobutene functionalized with phosphono groups,
- vi) reaction of the polyisobutene block with a borane and subsequent oxidative cleavage to give a hydroxylated polyisobutene,
- vii) reaction of the polyisobutene block with an SO₃ source, preferably acetyl sulfate or oleum, to give a polyisobutene having terminal sulfo groups, and
- viii) reaction of the polyisobutene block with oxides of nitrogen and subsequent hydrogenation to give a polyisobutene having terminal amino groups.

Claim 39 (Previously Presented): The aqueous polymer dispersion according to claim 29, wherein the at least one amphiphilic polymer is obtained by reacting hydrophobic units A comprising a functionalized polyisobutene block with alkylene oxides or by a polymer-analogous reaction with one or more polyalkylene oxides.

Claim 40 (Previously Presented): The aqueous polymer dispersion according to claim 29, comprising from 0.1 to 70% by weight of blends of amphiphilic polymers.

Claim 41 (Previously Presented): The aqueous polymer dispersion according to claim 29, comprising from 0.5 to 20% by weight of the at least one amphiphilic polymer.

Claim 42 (Previously Presented): The aqueous polymer dispersion according to claim 29, wherein:

A is a polyisobutene block having an average molar mass M_n of from 200 to 50,000;
and

B is a polyalkylene oxide block having an average molar mass M_n of from 200 to 50,000.

Claim 43 (Previously Presented): The aqueous polymer dispersion according to claim 29, wherein:

A is a polyisobutene block having an average molar mass M_n of from 200 to 20,000;
and

B is a polyalkylene oxide block having an average molar mass M_n of from 500 to 30,000.

Claim 44 (Previously Presented): The aqueous polymer dispersion according to claim 29, wherein:

A is a polyisobutene block having an average molar mass M_n of from 450 to 5,000;
and

B is a polyalkylene oxide block having an average molar mass M_n of from 800 to 15,000.

Claim 45 (Previously Presented): The aqueous polymer dispersion according to claim 29, wherein:

A is a polyisobutene block having an average molar mass M_n of from 450 to 5,000;

B is a polyalkylene oxide block having an average molar mass M_n of from 800 to 15,000; and

the polyisobutene block comprises polyisobutene functionalized with succinic anhydride groups (PIBSA).

Claim 46 (Previously Presented): A process for preparing the aqueous polymer dispersion according to claim 29, comprising:

polymerizing ethylenically unsaturated monomers in the aqueous medium in the presence of the at least one free radical polymerization initiator and the at least one stabilizer by an emulsion polymerization method;

wherein:

the at least one stabilizer is employed before, during or after the polymerization;

at least 50 mol% of the hydrophobic units A are polyisobutene macromolecules having terminally arranged double bonds.

Claim 47 (Previously Presented): The process according to claim 46, wherein:

the amphiphilic polymer has an A-B-A structure;

A is a polyisobutene block having an average molar mass M_n of from 200 to 20,000;

and

B is a polyalkylene oxide block having an average molar mass M_n of from 500 to 30,000.

Claim 48 (Previously Presented): The process according to claim 46, wherein:

the amphiphilic polymer has an A-B-A structure;

A is a polyisobutene block having an average molar mass M_n of from 450 to 5,000;

and

B is a polyalkylene oxide block having an average molar mass M_n of from 800 to 15,000.

Claim 49 (Previously Presented): The process according to claim 46, wherein:

the amphiphilic polymer has an A-B-A structure;

A is a polyisobutene block having an average molar mass M_n of from 450 to 5,000;

B is a polyalkylene oxide block having an average molar mass M_n of from 800 to

15,000; and

the polyisobutene block comprises polyisobutene functionalized with succinic anhydride groups (PIBSA).

Claim 50 (Previously Presented): An associative thickener for aqueous media, comprising the aqueous polymer dispersion according to claim 29.

Claim 51 (Previously Presented): A paper coating slip, comprising the aqueous polymer dispersion according to claim 29.